



November 9, 2001

John Womersley  
D0  
MS 357

Harry Weerts  
D0  
MS 357

Dear John & Harry,

The FY2002 budget for Fermilab is significantly lower than we expected early in the year. Part of this decrease is due to funding appropriately reprogrammed to deal with the University shortfall. We have just been informed of two additional cuts due to a General Reduction for the Office of Science and to meet the Congressionally mandated level of General Plant Projects. As a result of all of these actions and some additional demands on Fermilab funds, we have large additional reductions to make in funding for physics programs. Finally, we expect the FY2003 budget to be even more difficult.

As a result of these developments, we do not have the funding available for Fermilab programs over the period FY2002-3 that we thought we would have at the start of the process of establishing the accelerator and detector upgrades for Run 2b. We are choosing to concentrate almost all discretionary funds to this effort and everything at the Laboratory other than NuMI and Tevatron operations is being reduced as a result. With the funding level available for this year and next, however, even this concentration of resources does not come close to funding fully the upgrade proposals we received.

We need to solve this problem in the way that makes the most of the physics opportunities. In the table below is our guidance about the level of M&S funds available for the detector upgrade, including silicon and other subprojects, every year from FY2002 to FY2005. Because of the additional projects that you need prior to 5E32 running, you will probably need additional M&S funding. You will have to decide how much you would like to transfer from the planned spending on new computing equipment to meet this need. John Cooper and Matthias Kasemann will separately give you a summary of the technical manpower available for the silicon projects. When we establish baseline cost for these projects, we will have to include cost for all of the manpower, but to guide the next step the manpower list is more useful.

	FY02	FY03	FY04	FY05	FNAL funds	Other sources	Total
M&S Funds	2.5	2.8	2.8	1.0	9.1	2.4	11.5

M&S Funding available for the entire D0 upgrade

Starting with the components in the Technical Design Report, you should design a more limited upgrade that can be built with the resources described in our guidance. You should optimize the design to keep as much performance for Higgs and other high-mass searches as possible. Your contingency estimate for the entire project should be no less than 40% of the total project cost, although we understand that individual items will have more or less contingency assigned to them. The required manpower including reasonable contingency should fit the manpower plan that we give you. If your initial plan requires more than that staffing level at the peak of the project you would have to solve that problem by adjusting the schedule to reduce the peak load, converting M&S funds, or using additional technical manpower committed to the project by other institutions within the collaboration.

We originally discussed a date of July, 2004 for completing the detector upgrades. This is unrealistic with the funding profile that we can make available. It appears that the presently installed silicon detectors should function for some time beyond that date, and we no longer assume that the detector installation shutdown and the shutdown for electron cooling must be at the same time. You should work to have a schedule in which the detectors are ready to install in January, 2005. The schedule should have reasonable float in it so that there is a high probability of completion on time. If this is impossible to do by January, 2005, we will have to look again at how to proceed.

You should prepare a description of the upgrade that satisfies these constraints in time for the Technical Review Committee. This will allow us to make the best use of that review in getting to a realistic baseline for the upgrade that we could approve. I realize this is not an easy charge. But the physics goals are important enough that we need to find the best way to achieve them. At the same time, we need to set up a plan which we can execute on the specified schedule.

Sincerely,



Michael Witherell

Cc: M. Kasemann  
J. Cooper  
J. Kotcher  
S. Holmes  
M. Shaevitz  
K. Stanfield  
T. Yamanouchi